CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/WNo.15/KRIDL/GSB-1/2014-15 Date : 09.10.2014

GRADATION FOR GSB (CLOSE GRADED)
IS : 2720 (Part - 4)

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014

Date of Testing : 09.10.2014

Sample Source : GSB, Mix plant Bangalore **Oven Dry Wt (gm) :** 26425

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	100	100
53.0	1279	1279	4.84	95.16	80-100
26.50	5156	6435	24.35	75.65	55-90
9.50	4097	10532	39.86	60.14	35-65
4.75	4285	14817	56.07	43.93	25-55
2.36	5145	19962	75.54	24.46	20-40
0.425	3094	23056	87.25	12.75	10-25
0.075	2245	25301	95.75	4.25	3-10
PAN	1124				
Total	26425				

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

Note:

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Job No.: CTCE/BBMP/WNo.15/KRIDL/WMM/Gradation/2014-15

17.10.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014

Date of Testing : 17.10.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **27130**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	558	558	2.1	97.9	95-100
22.4	5326	5884	21.7	78.3	60-80
11.2	6823	12707	46.8	53.2	40-60
4.75	5357	18064	66.6	33.4	25-40
2.36	3968	22032	81.2	18.8	15-30
0.600	1248	23280	85.8	14.2	8-22
0.075	2265	25545	94.2	5.8	0-8

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NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.15/KRIDL/BM/Bitumen/2014-15 24.10.2014

BITUMEN DETERMINATION OF BITUMINOUS MACADAM MIX

As per IRC : SP : 11 - 1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Cross Roads behind Old CMC Office, Ward No. 15
DATE OF TESTING	24.10.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00
7. Bitumen content in %	3.50	3.60
8. Average	**3.55**	

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CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.15/KRIDL/BM/Gradation/2014-15 24.10.2014

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Cross Roads behind Old CMC Office, Ward No. 15
DATE OF TESTING	24.10.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	22.92	4.75	4.75	95.25	90-100
13.2	98.75	20.47	25.22	74.78	56-88
4.75	218.32	45.25	70.46	29.54	16-36
2.36	85.24	17.67	88.13	11.87	4-19
0.3	30.95	6.41	94.55	5.45	2-10
0.075	11.57	2.40	96.94	3.06	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	24.78	5.14	5.14	94.86	90-100
13.2	88.52	18.37	23.51	76.49	56-88
4.75	213.79	44.35	67.86	32.14	16-36
2.36	74.58	15.47	83.33	16.67	4-19
0.3	45.95	9.53	92.87	7.13	2-10
0.075	11.28	2.34	95.21	4.79	0-8

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BC/Bitumen/2014-15 25.10.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Cross Roads behind Old CMC Office, Ward No. 15
DATE OF TESTING	25.10.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	26.50
7. Bitumen content in %	5.10	5.30
8. Average	**5.20**	

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BC/Gradation/2014-15 25.10.2014

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements & Asphalting of Old CMC Office back side area 1st, 2nd & 3rd Cross Roads in Dasarahalli Ward No. 15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Cross Roads behind Old CMC Office, Ward No. 15
DATE OF TESTING	25.10.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	45.68	9.63	9.63	90.37	79-100
9.5	39.64	8.35	17.98	82.02	70-88
4.75	65.12	13.72	31.70	68.30	53-71
2.36	92.57	19.51	51.21	48.79	42-58
1.18	46.81	9.87	61.08	38.92	34-48
0.6	43.13	9.09	70.17	29.83	26-38
0.3	32.67	6.89	77.05	22.95	18-28
0.15	30.89	6.51	83.56	16.44	12-20
0.075	47.57	10.03	93.59	6.41	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.95	9.92	9.92	90.08	79-100
9.5	38.46	8.12	18.04	81.96	70-88
4.75	71.57	15.12	33.15	66.85	53-71
2.36	58.93	12.45	45.60	54.40	42-58
1.18	76.53	16.16	61.76	38.24	34-48
0.6	36.18	7.64	69.40	30.60	26-38
0.3	28.65	6.05	75.45	24.55	18-28
0.15	35.94	7.59	83.04	16.96	12-20
0.075	53.78	11.36	94.40	5.60	4-10

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